

# *Radiation Length Distribution*

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# Modified Medium for Pixel Layer

Before

G10 1.2mm (Passive)

width 14mm

Si 200um (Sensor)

Coolant ( $C_5F_{12}$ )  $\phi$  2mm

M55J 500um (Omega)

total = 0.83 (%)

After

M55J 390um (BUS)  
= 100um (Al) +  
290um (G10)

width 15mm

Si 350um (Sensor+RC)

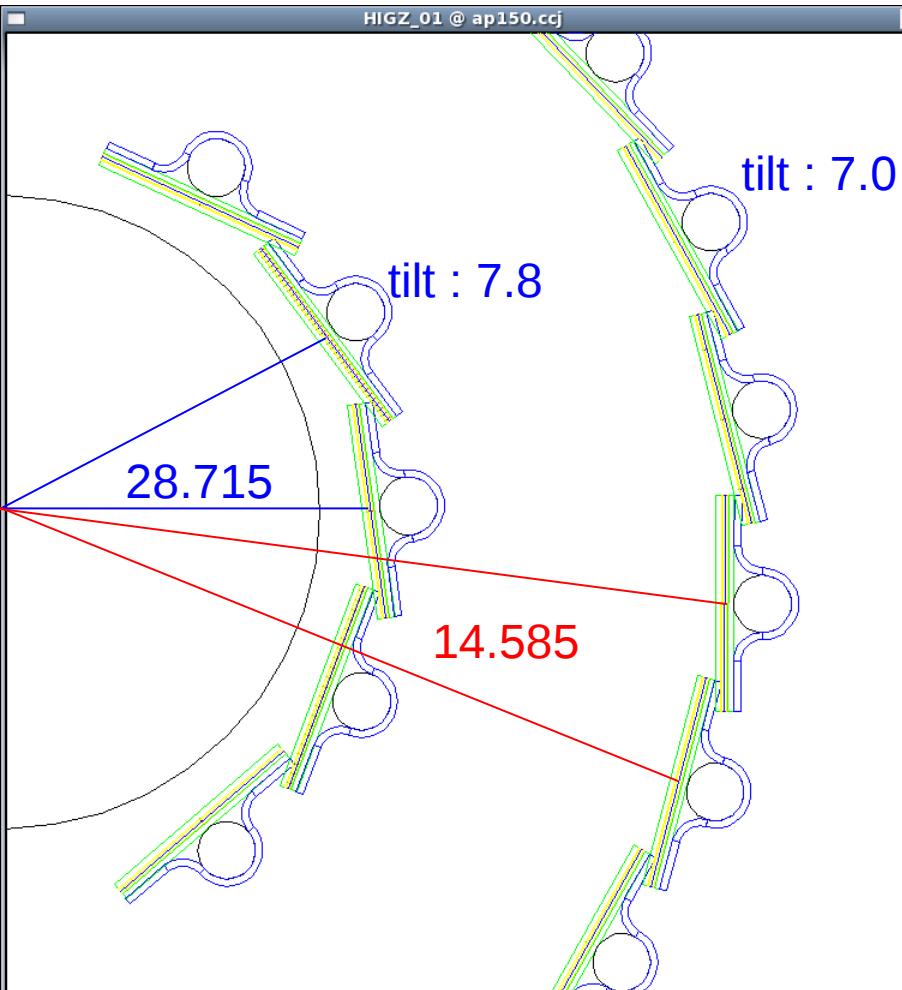
Coolant ( $H_3C_4OF_7$ )  $\phi$  3mm

Material (radl(cm))	Radiation Length (%)
Al (radl:8.9)	0.11 (100um)
G10 (radl:19.4)	0.15 (290um)
Resin (radl:35.5)	0.06 (100+100um)
Si (radl:9.36)	0.37 (200um+150um)
Carbon Fiber (radl:26.6)	0.11 (300um)
M55J (radl:25.86)	0.19 (500um)
$H_3C_4OF_7$ (radl:30.84) ( $\phi$ 2mm $\rightarrow$ $\phi$ 3mm)	average 0.31 (940um)
Sum	1.30

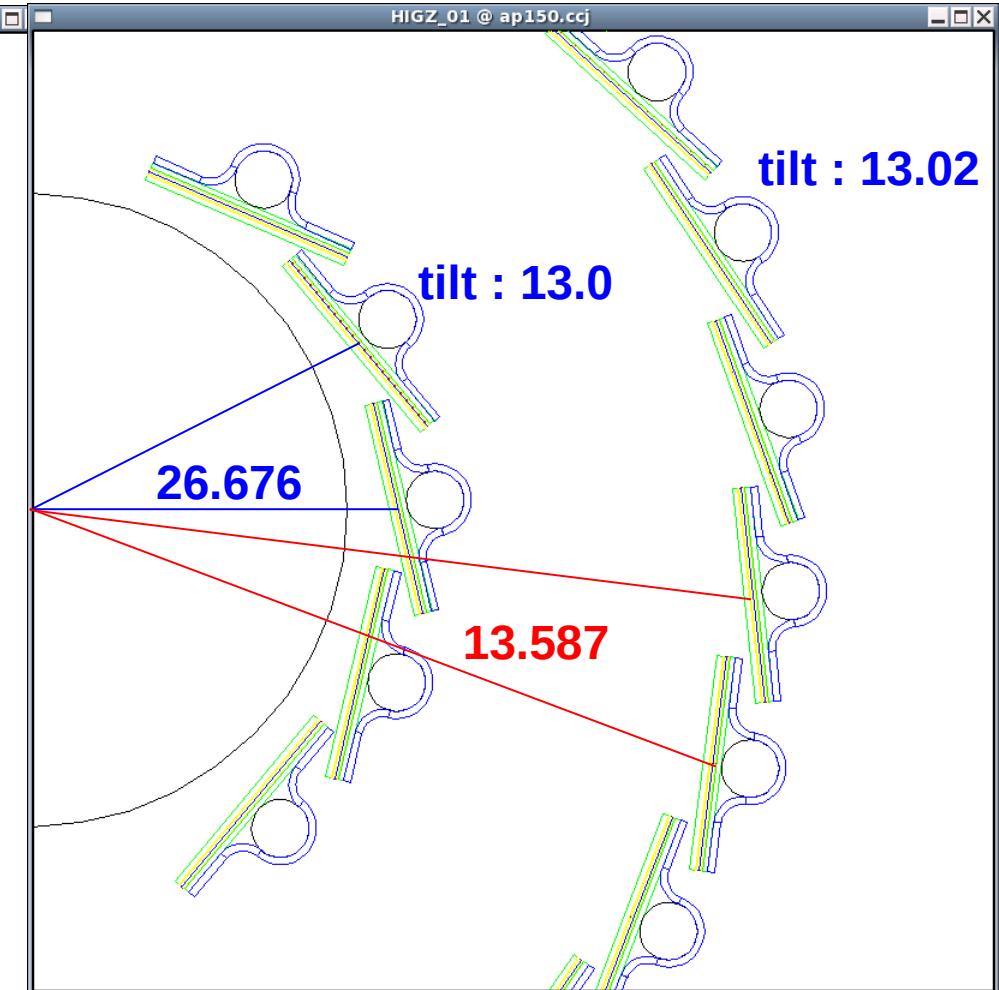
total = 1.30 (%)

# Tilt Angle of Pixel Layer

Previous

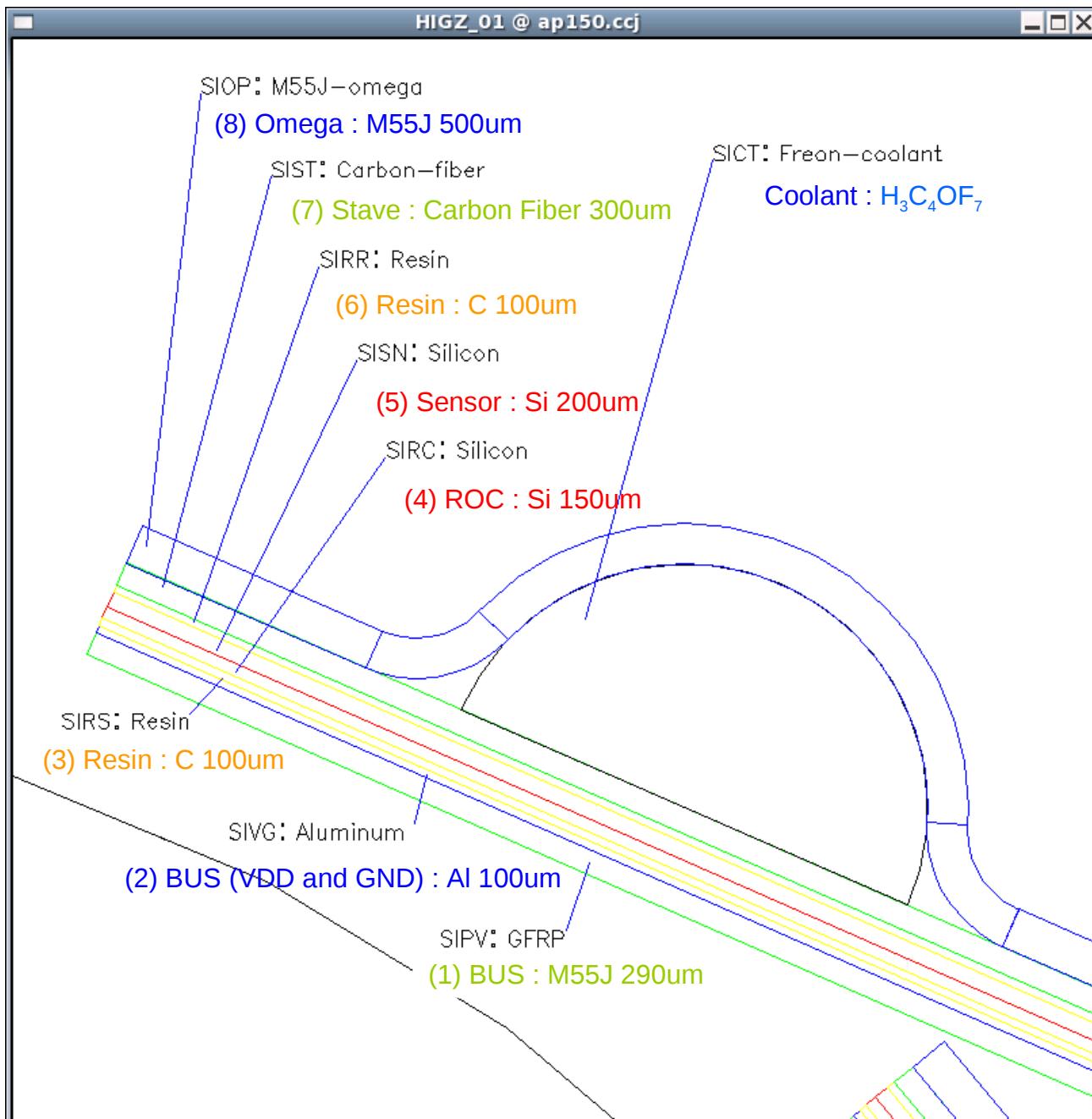


Present



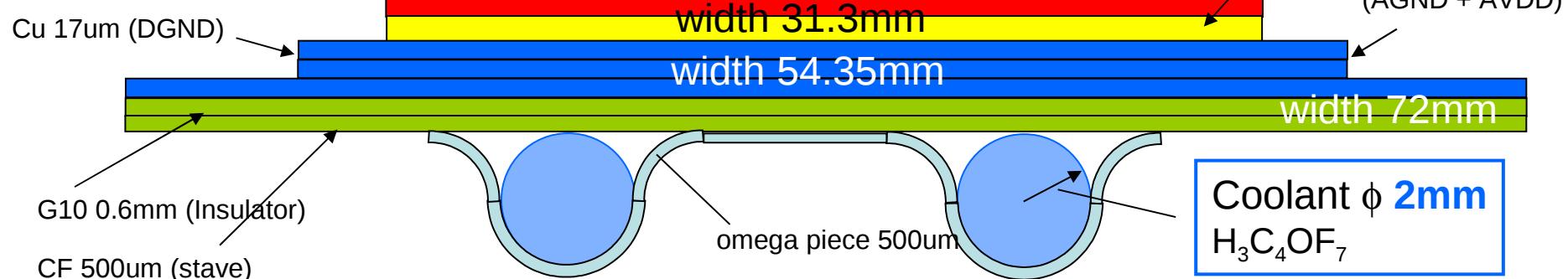
UNIT : degree  
3

# Present Material of Pixel Layer

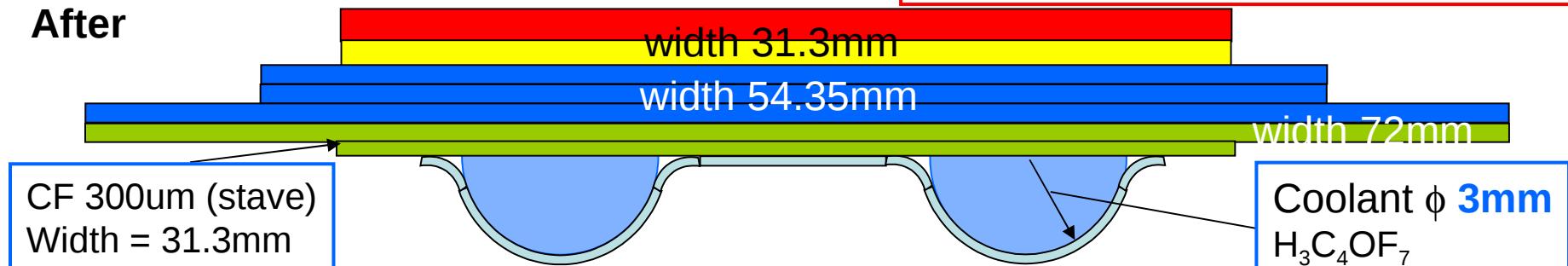


# Modified Medium for Strip Layer (ROC3 ½ oz)

**Before**



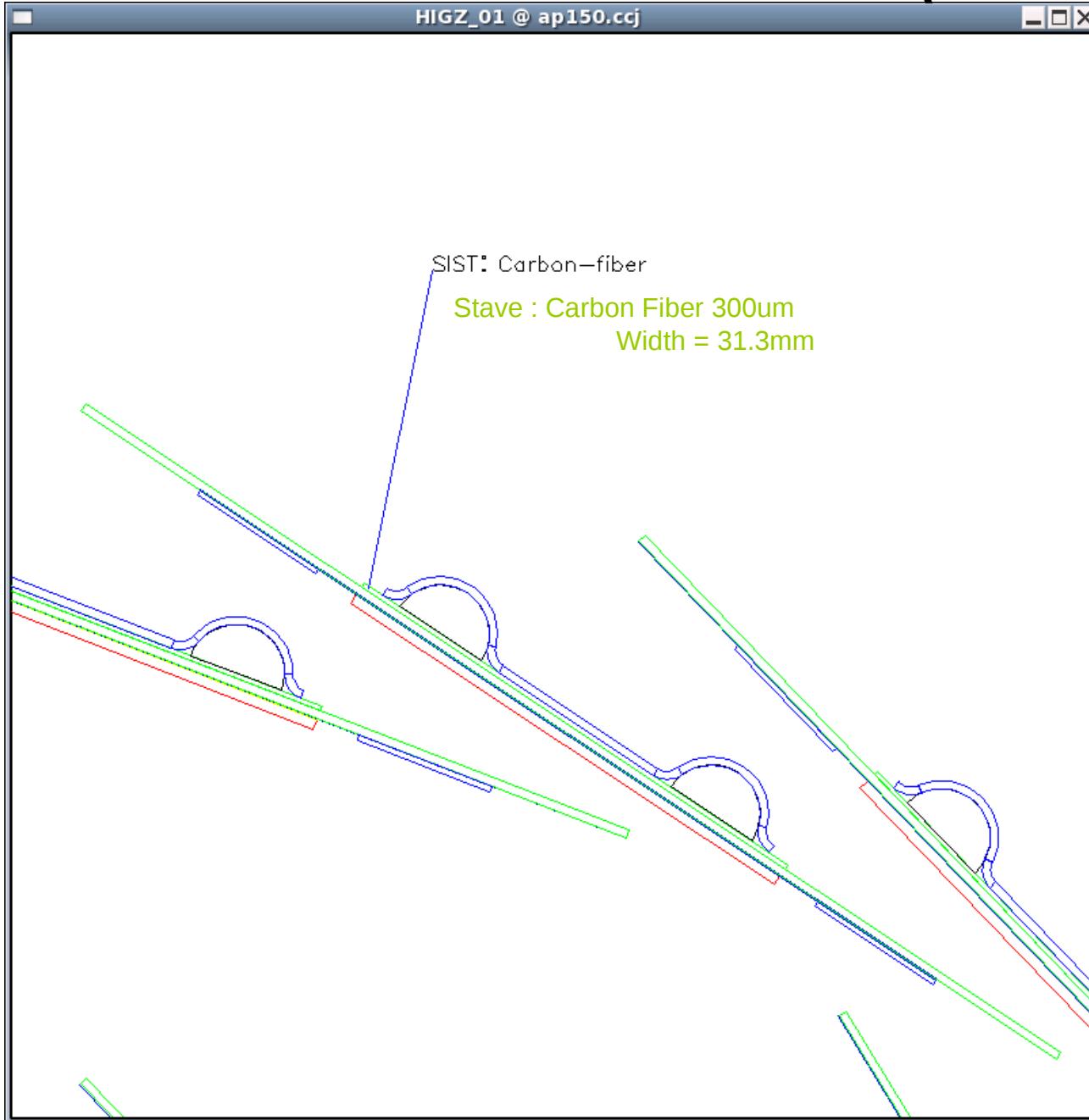
**After**



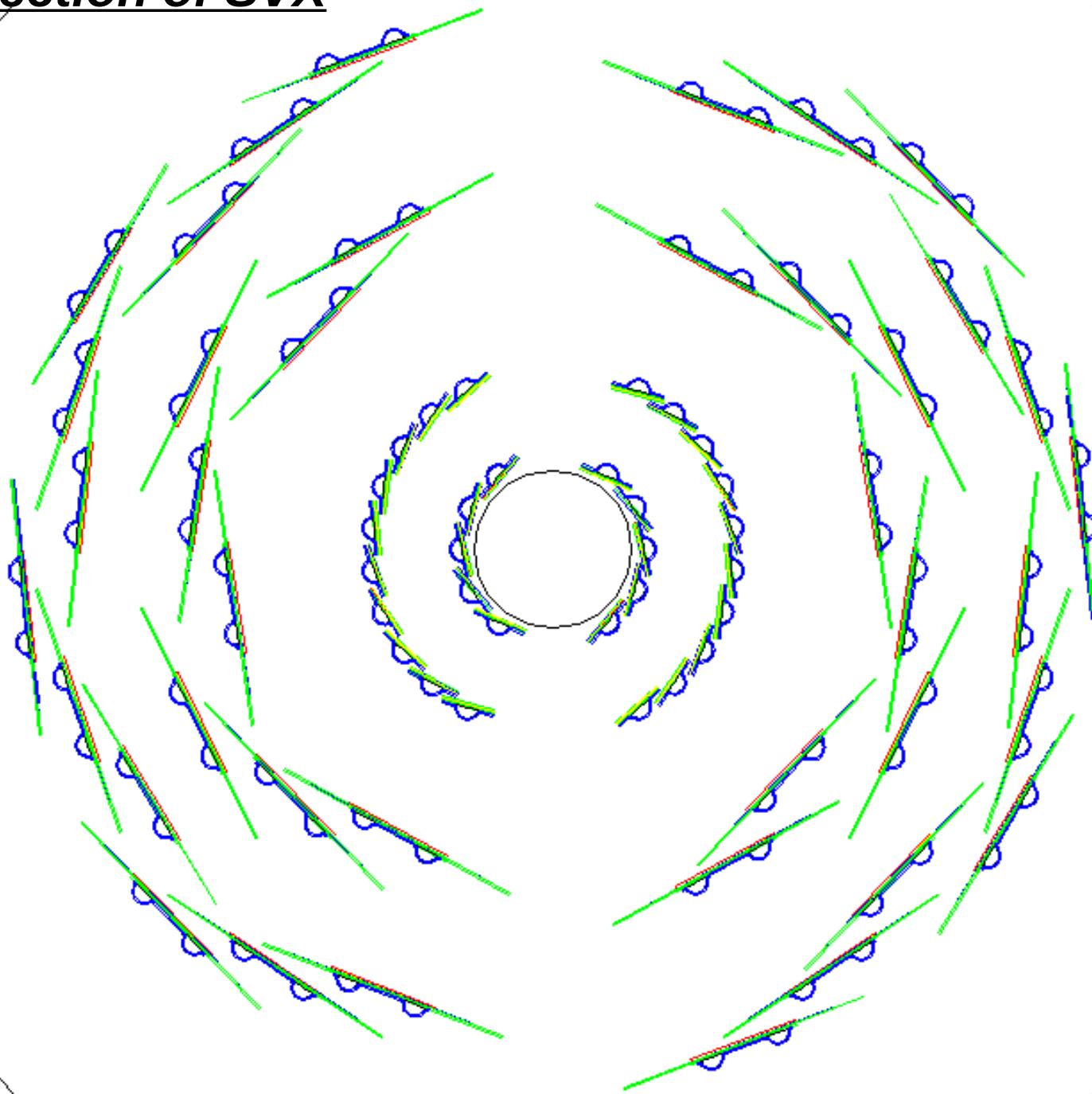
Material (radl(cm))	Radiation Length (%)
Si (radl:9.36)	0.67 (625um)
Cu (radl:1.43)	0.48 (68um)
G10 (radl:19.4)	0.31 (1.2mm → 0.5mm)
CF (radl:26.6)	0.19 (500um)
$H_3C_4OF_7$ (radl:30.84)	average 0.13 (350um → 393um)
M55J (radl:25.86)	0.19 (500um)
<b>Sum</b>	<b>1.97</b>

total =  $1.97 + 1.25*1.3 \sim 3.6 \text{ (%)}$

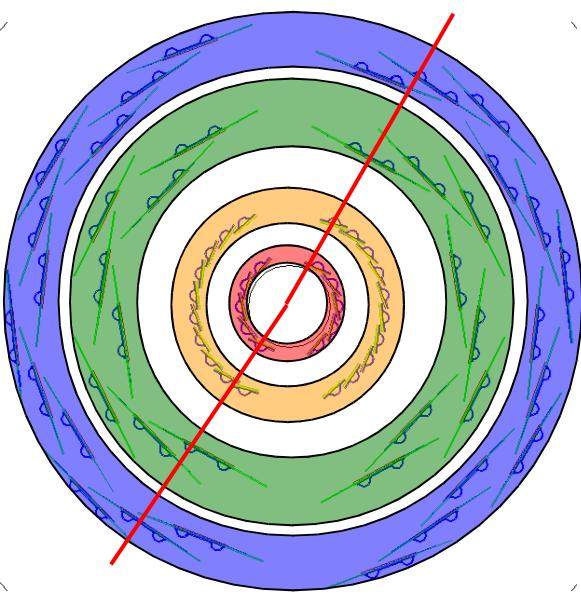
# Stave Thickness 300um Stave Width 31.3mm (ROC3 ½ oz)



## Cross Section of SVX

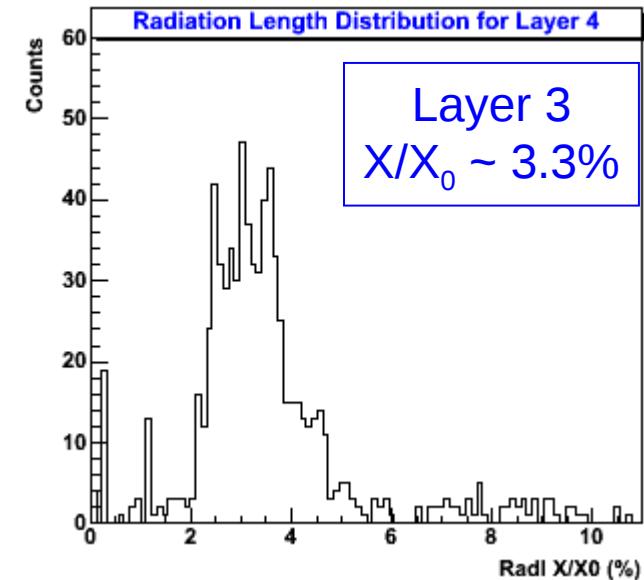
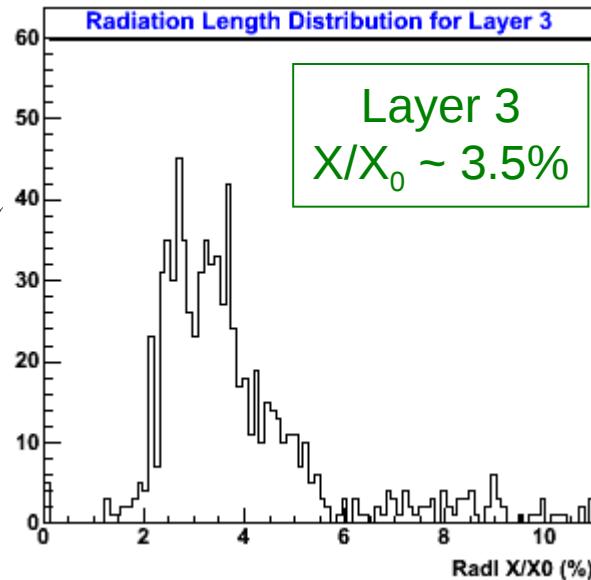
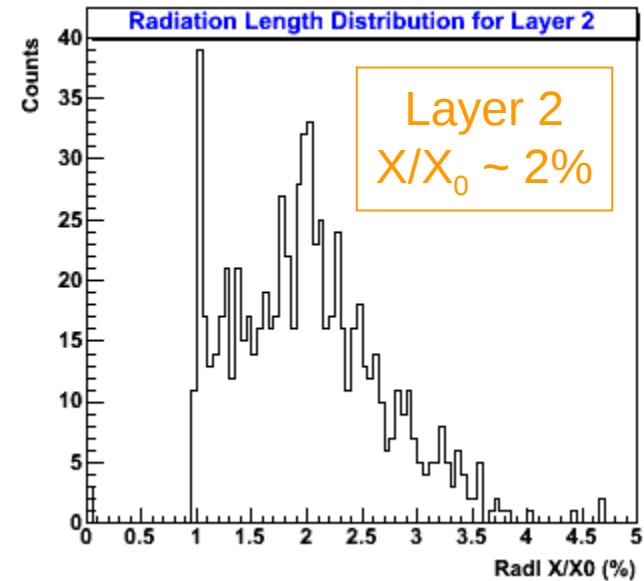
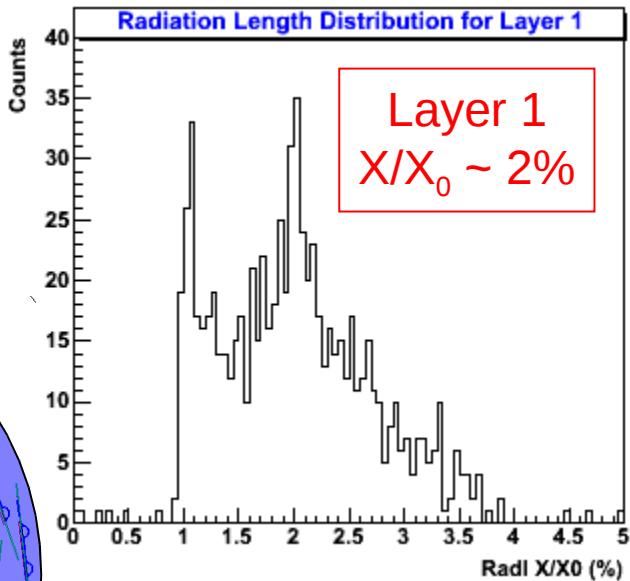


# Stave Thickness 300um Stave Width 31.3mm (ROC3 ½ oz)



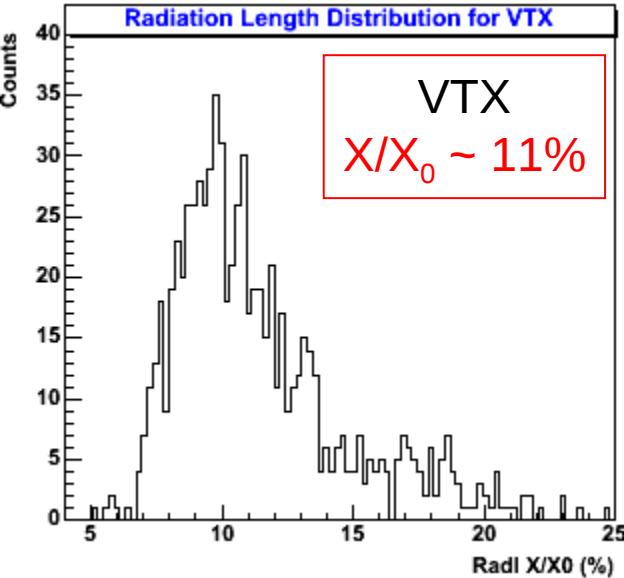
## CONDITION

- $-1.2 < \eta < 1.2$  (FLAT)
- $0.0 < \phi(\text{degree}) < 360$  (FLAT)

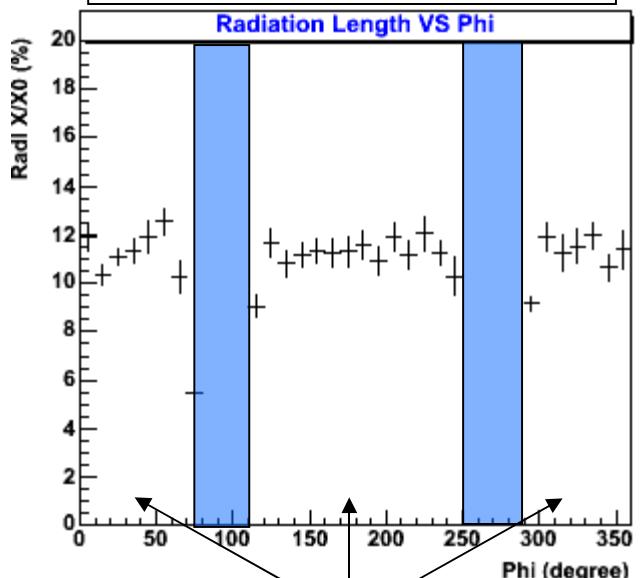


# Radiation Length Distribution (ROC3 ½ oz)

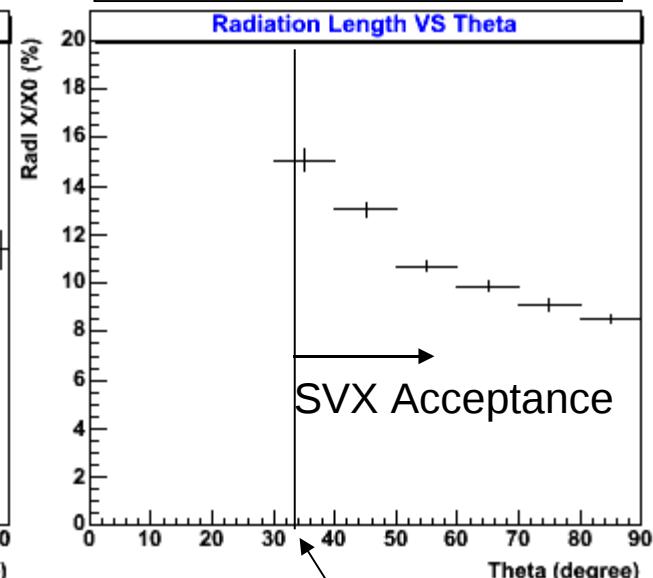
Radiation Length for VTX



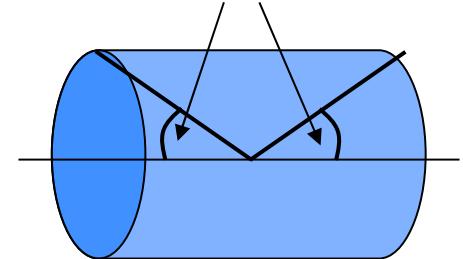
Radiation Length v.s.  $\phi$



Radiation Length v.s.  $\theta$



$$\eta = 1.2 \rightarrow 33.5 \text{ (degree)}$$



Radiation length of VTX was estimated to be 11%.